REMARKS

Reconsideration and allowance are respectfully requested.

Withdrawal of the finality of the office action is respectfully requested.

The amendments were necessitated because of the Examiner's new grounds of rejections raised for the first time in the final rejection even though none of the rejected claims were amended in the previous response. That is, Applicant's previously made amendments, to claims 34 and 35, did not necessitate the new grounds of rejection to justify a first action final rejection of claims 31, 36-38, and 40 under 35 U.S.C. 112, second paragraph.

The amendments proposed in this Response address the issues on page 2 of the office action. No new matter has been added. Claims 43-47 depend from claim 42 which defines plural skin elements and therefore the rejection should be withdrawn. The amendments do not raise new issues since the Examiner has already considered and searched the defined features of each of the claims under consideration. Entry and withdrawal are requested.

The Examiner's observation that the same skin element functioning as flow modifier and transducer would be "new matter" is not understood. The specification points out several times that the present skin element functions as a flow modifier as well as transducer and that several such dual functioning skin elements may be used. The Examiner will agree that the Federal

Circuit has expressly stated that the specification, claims, abstract and drawings form the original disclosure and each of those sections provide basis for the claimed elements. Therefore, the so-called "new matter" observation is in error. See for example, original claims 31-47; specification pages 2-4, particularly, page 2, paragraph 1; page 3, paragraph 1; page 4, paragraphs 2 and 3.

Also, the Examiner's contention that the claims do not define the conforming skin elements being responsive to signals received from the same skin elements, is in error. Claim 1, for example points out that the skin elements are conformable, that a feedback control loop generates and transmits signals between the skin elements thereby conforming the skin elements to desired deformations adequately forms a basis for applicant's arguments. See also, for example, claim 6. Withdrawal of the rejections are respectfully requested.

Claims 1-6, 15, 17-25, 28, 29, 31, 36, and 47 are patentable under 35 U.S.C. 102(b) over Lurz.

As previously pointed out, Lurz describes a system which uses plural sensors 1, 3, 4, and vibration transmitters 2 on the surface 5 of a body 6 over which flow passes. Lurz mandates that the transmitters 2 be positioned between the sensors 1, 3, 4, and following each of the sensors for measuring the degree of turbulence along the flow path from sensors 1 to 3 to 4 and over transmitters 2 between each of two adjacent sensors (see column

3, lines 48-68, to column 4, lines 1-12), where the transmitters are to be disposed one behind the other (column 4, lines 28-43).

Lurz further provides that the transmitters receive periodic analyzer control signals after the sensors 1, 3, 4, relay measurements to the analyzer control circuits 7. Lurz further teaches that once the turbulence floe measurements are made and signals relayed to the transmitters then the sensor-transmitter combined system may be positioned as shown in Figure 3. In laminar boundary layers 8 the combined systems are arranged for dampening vibrations, in the turbulent boundary layer 9 they are arranged for reducing degree of turbulence and wind shearing stress and in the turbulent layer 10 further down from layer 9 they are arranged for increasing the degree of turbulence and increasing energy supply (see column 4, lines 44-65).

Nowhere in the entire Lurz reference there is a description, teaching or suggestion of conforming the skin elements responsive to signals received from the same skin elements as uniquely defined by the present invention.

The present invention is a conformable skin element system comprising one or more conformable skin elements, a controller, connections for coupling the conformable skin elements and the controller, a feedback control loop for generating and transmitting signals between the skin elements, the controller and the connections for conforming the skin elements to desired deformations. The skin elements may be adapted for active vortex control by mounting on a surface and forming a pressure

transducer and flow modifier on the surface.

Nothing in Lurz describes each and every claimed element. Therefore, Lurz cannot anticipate nor render obvious the present invention. For an invention to be anticipated, it must be demonstrated that each and every element of the claimed invention is present in the "four corners" of a single prior art, either expressly described therein or under the principle of inherency. Lewmar Marine Inc. v Barient Inc., 3 USPQ2d 1766, 1767-1768 (CAFC, 1987). The absence from prior art reference any claimed element negates anticipation. Kloster Speedsteel AB v. Crucible, Inc., 230 USPQ 81, 84 (Fed. Cir. 1986).

Claims 26, 27, 32, 33-35, and 41-46 are patentable under 35 U.S.C. 103(a) over Lurz and Blackwelder.

As previously pointed out, Lurz does not teach nor suggest the claimed invention. Any further combination would also therefore lead away from the present claims.

Blackwelder has been relied on as teaching piezoelectric material. In Figure 7 Blackwelder teaches that the airfoil 21 with piezoelectric array 22 be embedded in the leading edge of the body and airfoil 21. That teaching contradicts the airfoil arrangement taught by Lurz which requires alternate sensor and transmitter arrangement and disposing of the Lurz air foils along the entire length of the body. Therefore, Blackwelder cannot be combined with Lurz because they are mutually contradictory teachings. Thus, the present claims cannot be rendered obvious

with teachings of references that inherently are inapposite.

The courts have held, when the prior art contains apparently conflicting references, [the Board] must weigh each reference for its power to suggest solutions to an artisan of ordinary skill. In weighing the suggestive power of each reference, [the Board] must consider the degree to which one reference might discredit another. In re Young, 18 USPQ2d 1089, 1091 (CAFC, 1991).

Claim 7 is patentable under 35 U.S.C. 103(a) over Lurz and Mangalam.

As previously pointed out, Lurz does not teach nor suggest the claimed invention. Any further combination would also therefore lead away from the present claims.

Mangalam has been relied on as teaching amplifiers and filters. Given Lurz's teachings of measuring boundary layer degrees of turbulence and accordingly positioning the combined sensor-transmitter systems, there is no showing as to why one of ordinary skill in the art would be motivated to amplify and filter the signals either received from the Lurz sensors or sent to the Lurz transmitters. Of course, such a teaching can be garnered from hindsight reconstruction using the present invention as a guide. However, such reconstruction cannot form a basis for any obviousness holding.

"It is impermissible to use the claimed invention as an instruction manual or 'template' to piece together the teachings of the prior art so that the claimed invention is rendered

obvious." In re Fritch, 23 USPQ2d 1783, 1784 (CAFC, August 1992), quoting from In re Gorman, 18 USPQ2d 1885, 1888 (Fed. Cir. 1991). "This court has previously stated that one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention." Id. quoting from In re Fine, 5 USPQ2d 1600 (CAFC, 1988).

Claim 30 is patentable under 35 U.S.C. 103(a) over Lurz and McKillip.

As previously pointed out, Lurz does not teach nor suggest the claimed invention. Any further combination would also therefore lead away from the present claims.

McKillip has been relied on as teaching actuatable materials such as shape memory alloys. The Examiner then replaces the Lurz transmitters 2 with the alloys of McKillip to hold claim 30 to be obvious. The Examiner's modification does harm to the carefully designed Lurz device which mandates the adjacent positioning of the Lurz sensors and the Lurz transmitters, particularly the transmitters to be positioned one after another adjacent to the sensors. Lurz mandates that pattern even in the airfoil configuration. Therefore, it is not understood as to why one of ordinary skill would do harm to the Lurz device which would only function if designed according to teachings in that reference and replace it with the McKillip alloy without benefit of such a teaching from either of those references.

That [the prior art] might incorporate elements which could

be used in appellants' system does not render appellants' claims obvious when there is no suggestion of using these elements in substantially the same manner as appellants use them. In re Donovan, 184 USPQ 414, 421 (CCPA, 1975).

Claims 37 and 40 are patentable under 35 U.S.C. 103(a) over Lurz and Wygnanski.

As previously pointed out, Lurz does not teach nor suggest the claimed invention. Any further combination would also therefore lead away from the present claims.

Wygnanski has been relied on as teaching actuatable material mountable as a cantilever. However, that contradicts the Lurz mandated mounting of the combined sensor-transmitter system along the body for controlling turbulence and wind shearing stress.

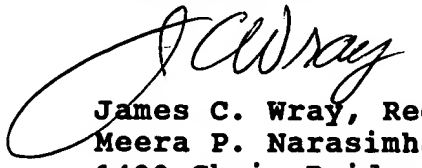
Citing In re Gordon, 221 USPQ, 1127, the court pointed out, "the mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification". In re Fritch, 23 USPQ2d 1783, 1784 (CAFC, August 1992). In the same case, In re Gordon, the court found a proposed modification inappropriate for an obviousness inquiry when the modification rendered the prior art reference inoperable for its intended purpose.

Nothing in the references, either singly or in combination, teaches or suggests the claimed features. Therefore, the references cannot anticipate nor render obvious the present

invention as claimed.

Since Applicant has presented a novel, unique and non-obvious invention, reconsideration and allowance are respectfully requested.

Respectfully,



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